

Postgraduate Program In Big Data Analytics



*Central University
Of
Rajasthan*



About the University

The Central University of Rajasthan (CURaj) was established by an Act of Parliament as a Central University. CURaj is a young, and vibrant university committed to growth of knowledge, development of industry/market oriented skills and technical capabilities, sustainable technologies and fulfilling the aspirations of the millennials. The University was ranked 34 in National Institutional Ranking Framework (NIRF) in the year 2016, the best among the universities established since 2009. As per the NAAC accreditation in 2016, the University is rated as 'A' category Universities in the country. The University has recruited faculty from 20 states of the country, many being from reputed institutions with postdoctoral experience from abroad. The University operates from its permanent campus of 520 (approx.) acres. It has adequate infrastructure, housing nearly 2000 students in the Campus. CURaj has state-of-art equipment, labs and a well-stocked library subscribing to most digital resources.

About Big Data

“Data is a precious thing and will last longer than the systems themselves.”

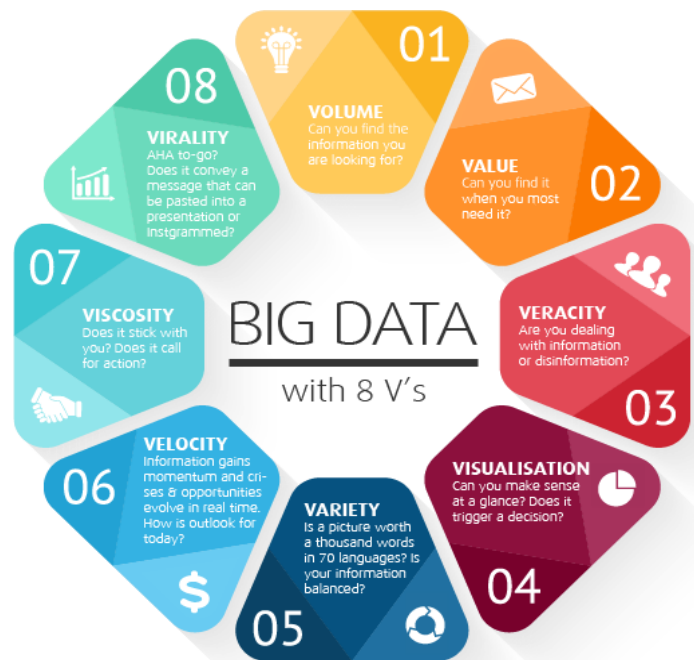
– **Tim Berners-Lee**, inventor of the World Wide Web

“We chose it because we deal with huge amounts of data. Besides, it sounds really cool.”

– **Larry Page**, co-founder of Google

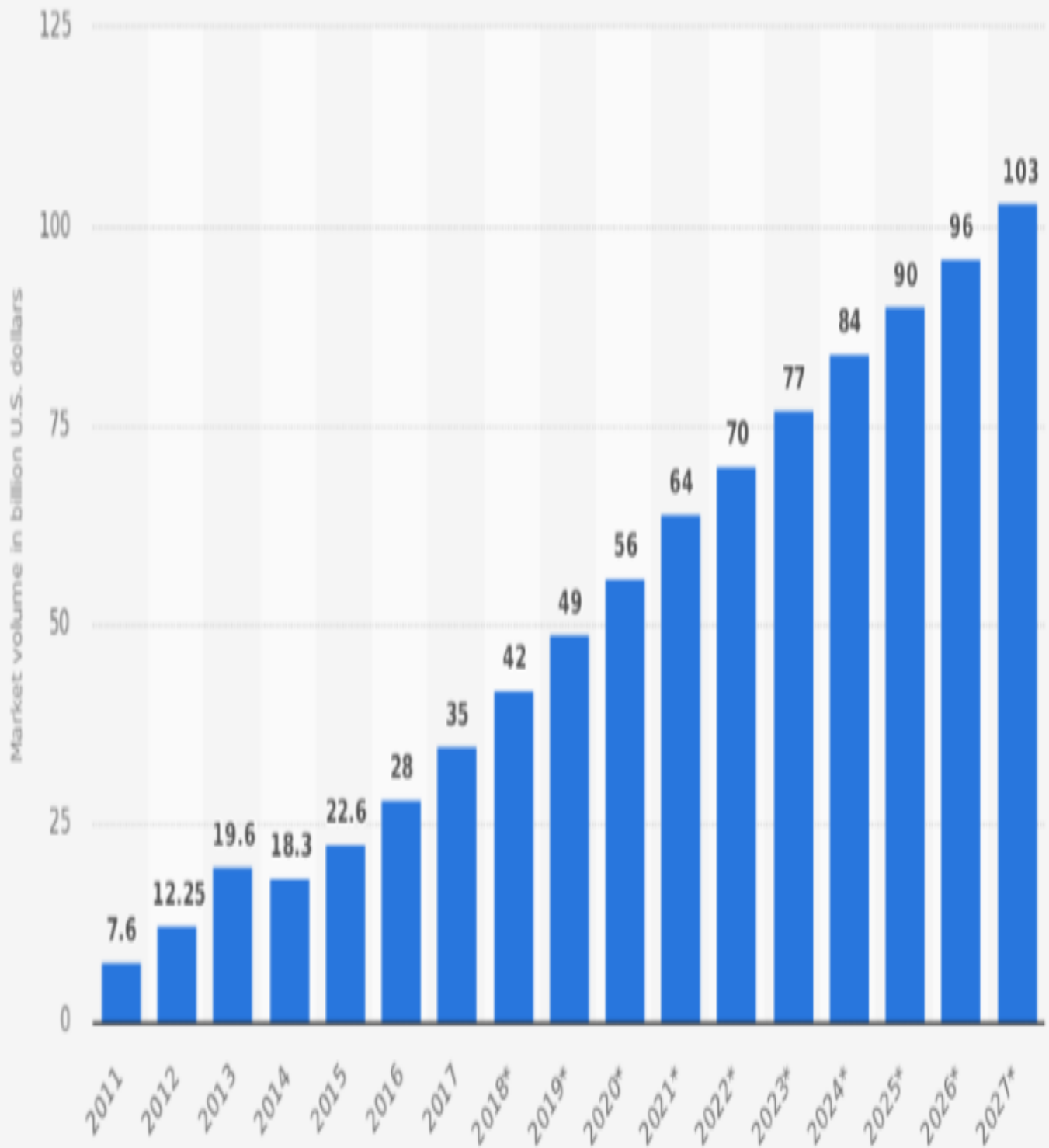
“Without data you’re just another person with an opinion.”

– **W. Edwards Deming**



Data Science is a highly multi-disciplinary subject requiring knowledge and skills in computer science, statistics and mathematics. The program MSc Big Data Analytics is therefore designed to train students in the essential tools and techniques from these disciplines, required for solving a wide range of problems in data science and analytics. A data scientist has to learn not only to apply the tools but also how they work. He/she has to remain alert and prepared for the frequent situations when things don't go as expected. Big data analytics is the most significant development in data science as massive amounts of data pour in every second. It has brought in a seismic shift in dealing with data—from massive parallelization to deep learning to Bayesian networks. The revolution is still in its very early stages.

Big data market size revenue forecast worldwide from 2011 to 2027 (in billion U.S. dollars)



Sources

Wikibon; SiliconANGLE

© Statista 2019

Additional information:

Worldwide; Wikibon; 2014 to 2018



M.Sc. CS (Big Data Analytics)

A 2-year

intensive pro-

gram to prepare

Data Scientists

for the new mil-

lennium.

The key phrase is “Data scientists”. We prepare our students to be data scientists not “data technicians”. Our students learn all the requisite languages, tools and techniques, e.g. R, Python, Java, DBMS, Hadoop, Spark, shell scripting, Keras, tensor flow and Amazon AWS to name a few. But they also learn advanced concepts in statistics (confidence intervals, Bayesian analysis, Gauss-Markov models, etc.) in computer science (algorithm analysis, network flows, graph algorithms, memory management, hidden Markov models etc.) and in mathematics (numerical algorithms, steepest descent methods, linear algebra, linear programming and duality, random graphs, high dimensional geometry and analysis, convex optimization etc.).

We see from the graph that currently the Big Data industry is worth nearly \$49 billion. There are several roles in this industry. For example, you could become a data scientist, a data engineer, a data analyst, a data architect or a data administrator etc. (see <https://www.datacamp.com/community/tutorials/data-science-industry-infographic>). Data scientists jobs are perhaps the most demanding and that is why they are the highest paid. According to the website the required skills are statistics, mathematics and machine learning and proficiency in several programming languages and environments. In MSc BDA students get thorough training in statistics and mathematics but they also learn a lot more in computer science including machine learning.

M.Sc. CS (Big Data Analytics)

M.Sc. CS (Big Data Analytics) is offered as 4-semester PG program in the Department of **Data Science and Analytics**, in collaboration with **TCS**. The program was designed to provide students with a firm foundation on analytical techniques of Big Data as well as to be ready for the industry. The program consists of a judicious blending of Statistics, Mathematics, Computer Science, and Humanities courses (see syllabus for details). In the last semester, the **eligible** students will be required to do internships in any of the TCS offices across the country.

Admission Process

Admission to this program is through the Central Universities Common Entrance Test (CUCET-2019) (<https://cucetexam.in/>). The candidates are expected to check the admission notification of CUCET-2019. The entrance test will be of multiple choice type with 100 questions and 2 hours duration. A candidate can apply to this program in addition to other M.Sc. programs of any participating central universities provided that the examination schedule is not clashing. The syllabus for the test will be notified in CUCET website. The admission is purely based on merit of the CUCET examination. The University follows the reservation policy specified by Govt. of India. There is no other means of entry to this course.

Academics

Students will be required to undergo rigorous academic schedule specified by the University which include continuous assessments, assignments, labs, and seminars during the semesters. Students will also be required to attend lectures by visiting academics and industry professionals on advanced topics. They will also be interacting with TCS experts through video conferencing. There will be orientation programs at the beginning of each stages (academic training and internship). Selected candidates will be instructed to cover some pre-program courses online.

Industry Partnership



The program was jointly developed by **TCS** and **CURaj**. CURaj has signed an MoU with Tata Consultancy Services (TCS) to help develop and deliver the course curriculum and laboratory facilities. Dr. Bimal Roy, Padma Shri and former Director, Indian Statistical Institute (ISI), Kolkata is also offering his expert guidance for the course.

Career Prospects

Curriculum design is industry relevant enabling ample placement opportunities. On successful completion, the candidate will be ready to embark on a flourishing career in leading organizations, including TCS, for candidates who meet with the selection criteria prescribed by TCS in the field Big Data Analytics. Candidates can also pursue higher education in any of the reputed organizations.

Semester—I	Semester—II	Semester—III	Semester—IV
Statistical Methods	Foundation of Data Science	Modelling in Operations Management	Internship based project
Probability Distributions	Advance Statistical Methods	Enabling Technologies for Data Science	
Linear Algebra & Matrix Theory	Machine Learning	Data Mining	
Computing for Data Sciences	Value Thinking	Time Series & Forecasting	
Database Management	Combinatorial Optimization	Deep Learning	
Professional Communication	Introduction to Econometrics & Finance	Cloud Computing	
Python with Java		Bioinformatics	

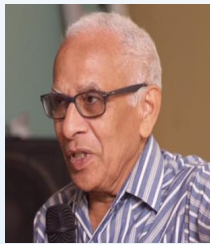
Advisors



Prof. Arun K Pujari
(Vice Chancellor, CURaj)



Prof. Bimal Roy
(Padma Shri, Ex-Director,
ISI Kolkata)



Prof. Rao Vemuri
(Emeritus Prof. UC Davis)



Mr. Dinanath Kholkar
TCS



Mr. Rajiv Noronha
TCS

Faculty Members



Dr. Manas Patra
(HoD ,Dept. of Data
Science And Analytics)



Mrs. Shatarupa Das
(Asst. Prof, Dept of Data
Science And Analytics)



Mr. Suresh Kumar (Asst.
Prof, Dept of Data
Science And Analytics)



Mr. Vikas Kumar (Asst.
Prof, Dept of Data
Science And Analytics)



Dr. A. Nagaraju (HoD,
Coordinator, Dept. of CS)



Dr. Krishna Kumar Mohbey
(Asst. Prof, Dept of CS)



Dr. Sanjay Arora, (Asst.
Prof. , Dept. of English)



Dr. Bhumika Sharma (Asst.
Prof ,Dept. of English)



Dr. Dipesh Kr. Bhati
(HOD),Dept. of Statistics



Dr. Jai Prakash Tripathi (Asst.
Prof , Dept. of Mathematics)



Dr. Promod K Naik (Asst.
Prof , Dept of Economics)



Dr. Pranta P Patnaik (Asst.
Prof ,Dept. of CMS)

Central University of Rajasthan

NH-8,
Dist-Ajmer-305817, Rajasthan [INDIA]

Email Id: info@curaj.ac.in
Phone : +91-1463-238755

www.curaj.ac.in